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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,412	10/12/2001	Creighton C. Kelly	S319	9945

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Milliken & Company  
P.O. Box 1927  
Spartanburg, SC 29304

EXAMINER
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TORRES VELAZQUEZ, NORCA LIZ

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 10/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/976,412	KELLY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Norca L. Torres-Velazquez	1771	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Cancellation of claims 32-36 has been noted.
2. Applicant's arguments filed on August 6, 2003 have been fully considered but they are not persuasive.

- a. Applicants argue that claims 1-3, 15-17 and 26-31 include the limitation of a "discontinuous fused zone" and that Paley teaches away from a discontinuous fused zone. Applicants refer to Column 3, lines 13-19 of Paley citing "...that the localized melting of the segments is insufficient to prevent the segments from release when subjected to agitation and other manipulations common in the use of the wiper".

The Examiner does not agree with Applicants interpretation of Paley's teachings in the paragraph cited above so as to teach away from a discontinuous fused zone. It is noted that the "localized melting" disclosed by Paley is with regards to the use of a hot knife or a hot wire to cut a wiper from a larger sheet to fuse the free segments produced during cutting at the edges. Paley solves the problem that causes the "localized melting of the segments" by providing the wiper with a fused border along the peripheral edges of the wiper. (Refer to Column 3, lines 29-32) It is the Examiner's position that while Paley discloses that the localized melting of the segments (at the edge of the fabric) is insufficient to prevent the segment from release when subjected to agitation and other manipulations common in the use of the wiper, it provides the fused border to preclude the release of the severed segments. It is noted that by "localized melting", Paley refer to the use of a hot knife or a hot wire to fuse and cut the edges of the sheet; in the present

application, the “localized melting” includes the fusing of the filaments in the border zone that is disposed inboard of and extending substantially parallel to at least one of the perimeter edges.

b. Applicants further argue that the Meitner reference constitutes non-analogous art with respect to the instance claims because it is directed to solving the problem of improving non-wovens and their manufacture to achieve a high degree of bulk and other desirable textile-like properties versus the present invention that is directed to a wiper suitable for use in a cleanroom environment with stable edges.

It is noted that the Examiner has relied on the Meitner reference to provide for the “discontinuous fused border zone” and the reference provides pattern structures that provide the claimed “discontinuity” versus the continuous fused border zone of the Paley reference. In response to applicant's argument that Meitner is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Meitner reference is in the field of applicant's endeavor (i.e. directed to nonwoven materials useful as wipers).

c. The amendment of claim 15 has been noted and the rejection of the claim over Paley in view of Meitner still deemed appropriate for the reasons stated above.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 15-17 and 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. (US 4,888,229) in view of MEITNER et al. (US 4,493,868) as stated in previous action.

PALEY et al. discloses a wiper for reducing particulate contamination, which otherwise might result from the use of the wiper in controlled environment, such as that maintained in a cleanroom, the wiper being of the type constructed at least partially from a thermoplastic fabric material. The wiper provides a fused border in the material along the peripheral edges of the wiper and extends inwardly into the wiper. (Abstract)

The reference discloses the use of materials such as polyester in the form of a knitted, woven or non-woven fabric. (Column 2, lines 50-57)

While PALEY et al. teaches a plurality of fused perimeter edges, it teaches a continuous fused border zone. It fails to teach the claimed discontinuous fused border zone with discrete fusion points formed by localized melt fusion.

MEITNER et al. teaches bonding in nonwoven materials by application of heat and/or pressure in patterned areas. (Column 1, lines 49-59; and Column 2, lines 19-38) The reference shows several patterns on Figures 5-10 and 11-16. MEITNER et al. teaches that the products of

Art Unit: 1771

their invention find particular application in disposable and limited use products such as wipers. (Column 2, lines 58-61) MEITNER et al. also teaches the use of ultrasonic bonding. The reference uses web compositions that include synthetic thermoplastic materials such as polyesters and bonding is achieved at temperatures and pressures sufficient to permit flow and bonding to occur to the extent desired for strength and other physical properties. (Column 2, lines 27-45)

Since both PALEY et al. and MEITNER et al. are from the same field of endeavor, wipers, the purpose disclosed by MEITNER et al. would have been recognized in the pertinent art of PALEY et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the wiper and provide it with bonding areas that comprise unbonded areas outside the bond (this will equate to the discontinuous fused zone of the present invention), with the motivation of producing an area with aesthetically pleasing appearance and with physical properties and characteristics approaching those characteristics of textile materials as disclosed by MEITNER et al. (Column 2, lines 28-36)

5. Claims 4, 18 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. and MEITNER et al. in view of MORIN et al. (US 6,189,189) as stated in previous action.

PALEY et al. and MEITNER et al. fail to teach heat setting the textile fabric at a temperature of from 180 to 300 degrees Fahrenheit.

MORIN et al. discloses a method of manufacturing a polyester textile fabric having a relatively low level of particulate contaminated and high absorbency is provided by heat setting the fabric at a temperature of 300°F or less. (Abstract)

The reference teaches a method of manufacturing a textile fabric for use in a cleanroom having the steps of constructing a knitted or woven fabric from polyester yarn, heat setting the fabric at a temperature of from 180° to 300° F, and cutting the fabric to form the desired article; wherein the polyester fiber has not been heated above the temperature of 300°F. (Column 2, lines 10-14)

The reference also teaches that the wipers of their invention may be constructed from woven or knitted polyester fibers, preferably fibers of poly (ethylene terephthalate). It is also preferable to construct the fabrics from continuous filament, polyester yarn. Examples of useful yarns are those having a denier to filament ratio of from 0.1 to 10, a denier of 15 to 250 with filament counts ranging from 10 to 250. Typically, the fabrics used for cleanroom wipers have a weight of 1 to 9 ounces per square yard. (Column 2, lines 54-61) Further, the reference teaches that the geometric shape of the cleanroom wiper can be squared or any shape may be employed. (Column 3, lines 53-57)

The MORIN et al. reference further teaches that the primary tests for contamination associated with cleanroom wipers are those measuring particles, unspecified extractable matter, and individual ionic constituents. The amount of extractable contamination associated with a cleanroom wiper is determined by extracting the wiper and the organic and inorganic non-volatile residue may be further analyzed. (Column 4, lines 44-65) The reference further discloses that by following the process of their invention it is possible to reduce non-volatile

Art Unit: 1771

residues to less than 0.005 grams/meters<sup>2</sup>, and even less than 0.003 grams/meters<sup>2</sup> as measured by short-term extraction. (Column 7, lines 5-8)

Since MORIN et al. teaches the importance of having reduced non-volatile residues in a cleanroom wiper and also teaches the use of polyester yarns, it is reasonable to presume that MORIN et al.'s invention would provide polyester that is substantially free of inorganic ionic additives in order to provide a wiper with reduced non-volatile residues. (As disclosed above)

Since PALEY et al. and MORIN et al. are from the same field of endeavor, cleanroom wipers; the purpose disclosed by MORIN et al. would have been recognized in the pertinent art of PALEY et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the cleanroom wiper and provide it with a method of heat setting the fabric at a temperature of 300°F or less with the motivation of providing it with dimensional stability and to provide a polyester fabric with low particulate since it is believed that by heating the polyester above 300°F causes low molecular weight polymers or oligomers to blossom to the surface of the polyester fibers, where they crystallize into small particles as disclosed by MORIN et al. (Column 2, lines 16-20 and Column 3, line 28).

6. Claims 5-14 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over PALEY et al. MEITNER et al. and MORIN et al. as applied to claim 4 above, and further in view of DEAN et al. (US 6,139,954) and ROCKWELL (US 6,001,442).

The prior art cited on paragraph 3 of this Office Action fails to teach the use of polyester free of inorganic additives.



DEAN et al. teaches fiber made from polyesters used as binder fibers for nonwovens, textile and industrial yarns and fabrics. The polyester taught by DEAN et al. does not contain any antimony catalytic materials (Claim 11) and it teaches that these polymers are clear and non-opaque. (Column 3, lines 14-20).

Since it is known from the prior art that polyester is usually manufactured using metallic catalysts, usually compounds of antimony or aluminum, in finite amounts. And that also delusterants such as titanium dioxide are often applied to alter the appearance of the completed product. (Refer to prior art listed under "Conclusion", below) DEAN et al.'s polyester will equate to the claimed polyester with substantially free ionic additives.

With regards to the brickwork pattern on claims 8-10 and 25, ROCKWELL teaches wiping roll towels that include an ultrasonically applied splice between segments of the roll towel. On Figure 1, there is shown a roll towel 10 that includes an ultrasonically bonded, boundary edge 12 disposed on either side of an intermediate textile surface 14. These boundary edges preferably have a discontinuous brick-like pattern formed therein. (Column 2, lines 9-26)

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the cleanroom wiper and provide it with a polyester that does not contain any antimony catalytic materials and that is clear and non-opaque with the motivation of avoiding having particles shed from polyester wipers that contain these metallic contaminants. It also would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide a brickwork pattern to the wiper edges since it is believed to provide exceptional flexibility as disclosed by ROCKWELL (Column 2, lines 23-24).

Art Unit: 1771

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 703-306-5714. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

NLT

October 27, 2003

  
ELIZABETH M. COLE  
PRIMARY EXAMINER